

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045

Tel: (314)298-8566

TestAmerica Job ID: 160-18591-1

Client Project/Site: ORNL Y-12 Outfall 200 Characterization

For:

Alliant Corporation

320 N Cedar Bluff Road

Suite 200

Knoxville, Tennessee 37923

Attn: Doug Milloway

Authorized for release by:

8/31/2016 3:02:19 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	6
Definitions/Glossary	7
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	11
QC Sample Results	13
QC Association Summary	22
Surrogate Summary	30
Tracer Carrier Summary	35
	36

Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Job ID: 160-18591-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Alliant Corporation

Project: ORNL Y-12 Outfall 200 Characterization

Report Number: 160-18591-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 8/11/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

POLYCHLORINATED BIPHENYLS (PCBs)

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 08/19/2016 and analyzed on 08/22/2016 and 08/23/2016.

Compound DCB Decachlorobiphenyl (Surr) and the internal standard eluted outside the retention time window on the column for the following CCV: (CCVIS 160-265947/3). This retention time shift was taken into account when reviewing the sample(s) for target compounds.

The continuing calibration verification (CCV) recovered above the upper control limit for PCB-1221 from the confirmation analysis. The

Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Job ID: 160-18591-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1260 for the following samples: YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9). The lower values have been reported and qualified in accordance with the laboratory's SOP.

EPA Method 8082/8082A requires a minimum of 3 peaks to be used for PCB quantitation. Due to the presence of matrix interferences and/or multiple aroclors in the following samples, less than 5 peaks were used for quantitation. YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP METALS (ICP)

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Method 1311/6010C. The samples were leached on 08/17/2016 and 08/18/2016, prepared on 08/19/2016 and 08/23/2016 and analyzed on 08/22/2016, 08/23/2016 and 08/24/2016.

Analytical Batch 160-266197

The following sample was diluted due to the nature of the sample matrix. When run at a lesser dilution, digested sample caused internal standard failures: YMTFA 47 SO 005 (160-18591-6). Elevated reporting limits (RLs) are provided.

The ICSA was outside upper QC limits for Arsenic. The concentrations in the samples are less than the reporting limit and do not require re-analysis. (ICSA 160-266197/8)

Analytical Batch 160-266472

The following samples were diluted due to the nature of the sample matrix. Samples are high in salts: YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8), YMTFA 64 SO 010 (160-18591-9), (160-18348-E-1-T MS ^), (160-18348-E-1-U MSD) and (160-18348-E-1-S SD ^). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP MERCURY

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 08/17/2016 and 08/18/2016, and prepared and analyzed on 08/23/2016.

Prep Batch 160-266071

The samples were re-digested/re-extracted due to the calibration curve and calibration QC expiring before analysis was able to be performed. The MS/MSD was therefore spiked after preservation. YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9)

Mercury was detected in method blank LB 160-266071/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged.

Prep 160-266078

The samples were re-digested/re-extracted due to the calibration curve and QC expiring before analysis was able to be performed. The MS/MSD was therefore spiked after preservation. YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5) and YMTFA 47 SO 005 (160-18591-6)

Mercury was detected in method blank LB 160-266078/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged.

Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Job ID: 160-18591-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/18/2016.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TRITIUM

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for Tritium in accordance with DOE. The samples were prepared on 08/19/2016 and analyzed on 08/22/2016 and 08/25/2016.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL BETA STRONTIUM (GFPC)

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for Total Beta Strontium (GFPC) in accordance with SR-03-RC. The samples were dried on 08/11/2016, prepared on 08/17/2016 and analyzed on 08/19/2016.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TECHNETIUM-99 (LSC)

Samples YMTFA 44 SO 005 (160-18591-1), YMTFA 33 SO 002 (160-18591-2), YMTFA 45 SO 005 (160-18591-3), YMTFA 46 SO 005 (160-18591-4), YMTFA 50 SO 005 (160-18591-5), YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8) and YMTFA 64 SO 010 (160-18591-9) were analyzed for Technetium-99 (LSC) in accordance with TC_02_RC. The samples were prepared on 08/18/2016 and 08/22/2016 and analyzed on 08/22/2016, 08/23/2016 and 08/25/2016.

The following samples, including the BKG, counted off the upper end of the quench curve parameter (tSIE): YMTFA 47 SO 005 (160-18591-6), YMTFA 48 SO 005 (160-18591-7), YMTFA 63 SO 010 (160-18591-8), (LCS 160-265402/2-A), (MB 160-265402/1-A) and (160-18591-C-6-E DU). A small amount (10 uL) of quenching agent (nitromethane) was added to the affected vials and recounted. The recount results were within the quench curve parameter and are reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica St. Louis

13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8566 Fax (314) 298-8777

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sample # <u>42-STOUT</u>		Lab PM. <u>Gish, Enika K</u>		Carrier Tracking No(s): <u>3192 5705</u>		COC No: <u>160-4422-2174.4</u>																																													
Client Contact:	Matt Frost	Phone: <u>816-255-5540</u>	E-Mail: <u>enika.gish@testamericainc.com</u>					Page: <u>4 of 3</u>	Job #: <u></u>																																												
Analysis Requested																																																					
<table border="1"> <tr> <td colspan="10">Preservation Codes:</td> </tr> <tr> <td>A - HCl</td> <td>M - Hexane</td> </tr> <tr> <td>B - NaOH</td> <td>N - None</td> </tr> <tr> <td>C - Zn Acetate</td> <td>O - AsNaO2</td> </tr> <tr> <td>D - Nitric Acid</td> <td>P - Na2O4S</td> </tr> <tr> <td>E - NaHSO4</td> <td>Q - Na2SO3</td> </tr> <tr> <td>F - MeOH</td> <td>R - Na2SO3</td> </tr> <tr> <td>G - Anchor</td> <td>S - H2SO4</td> </tr> <tr> <td>H - Ascorbic Acid</td> <td>T - TSP Dodecahydrate</td> </tr> <tr> <td>I - Ice</td> <td>U - Acetone</td> </tr> <tr> <td>J - DI Water</td> <td>V - MCAA</td> </tr> <tr> <td>K - EDTA</td> <td>W - pH 4-5</td> </tr> <tr> <td>L - EPA</td> <td>Z - other (specify)</td> </tr> <tr> <td colspan="10">Other:</td> </tr> </table>										Preservation Codes:										A - HCl	M - Hexane	B - NaOH	N - None	C - Zn Acetate	O - AsNaO2	D - Nitric Acid	P - Na2O4S	E - NaHSO4	Q - Na2SO3	F - MeOH	R - Na2SO3	G - Anchor	S - H2SO4	H - Ascorbic Acid	T - TSP Dodecahydrate	I - Ice	U - Acetone	J - DI Water	V - MCAA	K - EDTA	W - pH 4-5	L - EPA	Z - other (specify)	Other:									
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Other:																																																					
Total Number of Containers: <u></u>																																																					
Special Instruc ^{tions} : <u>PCBs</u> <u>Radionuclides</u> <u>TCLP MeHg</u>																																																					
Perform MS/MSD (Yes or No)																																																					
Field Filled Sample (Yes or No)																																																					
Project #: <u>16005502</u>																																																					
SSOW#:																																																					
Sample Identification																																																					
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, T=tissue, A=Air)	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	Project #: <u>16005502</u>	A	N																																												
YMTFA 44 SO 005	8-10	0848	C	S	X	X	X	X	X																																												
YMTFA 33 SO 002		0900			X	X	X	X	X																																												
YMTFA 45 SO 005		0950			X	X	X	X	X																																												
YMTFA 46 SO 005		1005			X	X	X	X	X																																												
YMTFA 50 SO 005		1045			X	X	X	X	X																																												
YMTFA 47 SO 005		1053			X	X	X	X	X																																												
YMTFA 48 SO 005		1112			X	X	X	X	X																																												
YMTFA 63 SO 010		1345			X	X	X	X	X																																												
YMTFA 64 SO 010		1455	✓		X	X	X	X	X																																												
Possible Hazard Identification																																																					
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological																																																					
Deliverable Requested: I, II, III, IV, Other (specify)																																																					
Empty Kit Relinquished by: <u>John J.</u>																																																					
Relinquished by: <u>John J.</u>																																																					
Relinquished by: <u></u>																																																					
Custody Seals Intact: <input type="checkbox"/> Custody Seal No.: <u></u>																																																					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																																																					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																																																					
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months																																																					
Special Instructions/QC Requirements:																																																					
Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Method of Shipment:																																													
<u>09-10-16 / 1030</u>	<u>09-11-16</u>	<u>09-11-16</u>	<u>09-11-16</u>	<u>09-11-16</u>	<u>09-11-16</u>	<u>09-11-16</u>	<u>09-11-16</u>	Date/Time: <u>09/11/16</u>	Company <u>TestAmerica</u>																																												
Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time: <u>09/11/16</u>	Company <u>TestAmerica</u>																																												
Cooler Temperature(s) °C and Other Remarks:																																																					

Login Sample Receipt Checklist

Client: Alliant Corporation

Job Number: 160-18591-1

Login Number: 18591

List Source: TestAmerica St. Louis

List Number: 1

Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
B	Compound was found in the blank and sample.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Rad

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
H3-04-RC	Tritium (LSC)	DOE	TAL SL
SR-03-RC	Total Beta Strontium (GFPC)	DOE	TAL SL
TC-02-RC	Technetium-99 (LSC)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-18591-1	YMTFA 44 SO 005	Solid	08/10/16 08:48	08/11/16 09:20
160-18591-2	YMTFA 33 SO 002	Solid	08/10/16 09:00	08/11/16 09:20
160-18591-3	YMTFA 45 SO 005	Solid	08/10/16 09:50	08/11/16 09:20
160-18591-4	YMTFA 46 SO 005	Solid	08/10/16 10:05	08/11/16 09:20
160-18591-5	YMTFA 50 SO 005	Solid	08/10/16 10:45	08/11/16 09:20
160-18591-6	YMTFA 47 SO 005	Solid	08/10/16 10:53	08/11/16 09:20
160-18591-7	YMTFA 48 SO 005	Solid	08/10/16 11:12	08/11/16 09:20
160-18591-8	YMTFA 63 SO 010	Solid	08/10/16 13:45	08/11/16 09:20
160-18591-9	YMTFA 64 SO 010	Solid	08/10/16 14:55	08/11/16 09:20

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TestAmerica St. Louis

Detection Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 44 SO 005

Lab Sample ID: 160-18591-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.36		0.13	0.038	mg/L	1		6010C	TCLP
Mercury	0.00013	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 33 SO 002

Lab Sample ID: 160-18591-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	0.051		0.033	0.0079	mg/Kg	1		8082A	Total/NA
Polychlorinated biphenyls, Total	0.051		0.033	0.0079	mg/Kg	1		8082A	Total/NA
Barium	0.17		0.13	0.038	mg/L	1		6010C	TCLP
Mercury	0.00013	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 45 SO 005

Lab Sample ID: 160-18591-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.65		0.13	0.038	mg/L	1		6010C	TCLP
Mercury	0.00014	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 46 SO 005

Lab Sample ID: 160-18591-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.54		0.13	0.038	mg/L	1		6010C	TCLP
Mercury	0.00015	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 50 SO 005

Lab Sample ID: 160-18591-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.35		0.13	0.038	mg/L	1		6010C	TCLP
Lead	0.020	J	0.025	0.0075	mg/L	1		6010C	TCLP
Mercury	0.00015	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 47 SO 005

Lab Sample ID: 160-18591-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.38	J	1.3	0.38	mg/L	10		6010C	TCLP
Mercury	0.00013	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 48 SO 005

Lab Sample ID: 160-18591-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.92		0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00014	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 63 SO 010

Lab Sample ID: 160-18591-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	0.015	J	0.033	0.0079	mg/Kg	1		8082A	Total/NA
Polychlorinated biphenyls, Total	0.015	J	0.033	0.0079	mg/Kg	1		8082A	Total/NA
Arsenic	0.096	J	0.13	0.050	mg/L	5		6010C	TCLP
Barium	1.0		0.63	0.19	mg/L	5		6010C	TCLP
Cadmium	0.10		0.063	0.019	mg/L	5		6010C	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Detection Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 63 SO 010 (Continued)

Lab Sample ID: 160-18591-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.34		0.13	0.038	mg/L	5		6010C	TCLP
Lead	1.4		0.13	0.038	mg/L	5		6010C	TCLP
Mercury	0.00010	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

Client Sample ID: YMTFA 64 SO 010

Lab Sample ID: 160-18591-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1254	0.014	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
PCB-1260	0.017	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Polychlorinated biphenyls, Total	0.031	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Barium	0.52	J	0.63	0.19	mg/L	5		6010C	TCLP
Mercury	0.00011	J B	0.0010	0.000079	mg/L	1		7470A	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 44 SO 005

Lab Sample ID: 160-18591-1

Matrix: Solid

Date Collected: 08/10/16 08:48

Date Received: 08/11/16 09:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:07	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	82			23 - 146			08/19/16 08:47	08/22/16 23:07	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:14	08/22/16 19:17	1
Barium	0.36		0.13	0.038	mg/L		08/19/16 12:14	08/22/16 19:17	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:14	08/22/16 19:17	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:17	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:17	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:14	08/22/16 19:17	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:17	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:06	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.202	U	0.205	0.205	1.00	0.326	pCi/g	08/19/16 13:28	08/22/16 15:22	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Strontium 89/90	0.126	U	0.141	0.141	3.00	0.232	pCi/g	08/17/16 18:19	08/19/16 14:04	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	85.2			40 - 110				08/17/16 18:19	08/19/16 14:04	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Technetium-99	-0.0855	U	0.234	0.234	1.00	0.407	pCi/g	08/18/16 08:43	08/22/16 17:30	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	96.6			30 - 110				08/18/16 08:43	08/22/16 17:30	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 33 SO 002

Date Collected: 08/10/16 09:00

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-2

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1260	0.051		0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
Polychlorinated biphenyls, Total	0.051		0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:30	1
Surrogate	%Recovery			Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	82			23 - 146			08/19/16 08:47	08/22/16 23:30	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:14	08/22/16 19:22	1
Barium	0.17		0.13	0.038	mg/L		08/19/16 12:14	08/22/16 19:22	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:14	08/22/16 19:22	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:22	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:22	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:14	08/22/16 19:22	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:22	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:08	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.0643	U	0.182	0.182	1.00	0.320	pCi/g	08/19/16 13:28	08/22/16 15:45	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.142	U	0.158	0.158	3.00	0.259	pCi/g	08/17/16 18:19	08/19/16 18:59	1
Carrier	%Yield			Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	84.7			40 - 110				08/17/16 18:19	08/19/16 18:59	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	-0.267	U	0.254	0.255	1.00	0.465	pCi/g	08/18/16 08:43	08/22/16 18:01	1
Tracer	%Yield			Limits				Prepared	Analyzed	Dil Fac
Tc-99m	91.3			30 - 110				08/18/16 08:43	08/22/16 18:01	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 45 SO 005

Date Collected: 08/10/16 09:50

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-3

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/22/16 23:52	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	87			23 - 146			08/19/16 08:47	08/22/16 23:52	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:14	08/22/16 19:26	1
Barium	0.65		0.13	0.038	mg/L		08/19/16 12:14	08/22/16 19:26	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:14	08/22/16 19:26	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:26	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:26	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:14	08/22/16 19:26	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:26	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00014	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:10	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.0519	U	0.194	0.194	1.00	0.344	pCi/g	08/19/16 14:09	08/25/16 03:56	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.0989	U	0.135	0.135	3.00	0.225	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	84.1			40 - 110				08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	-0.117	U	0.305	0.306	1.00	0.533	pCi/g	08/18/16 08:43	08/22/16 18:32	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	74.4			30 - 110				08/18/16 08:43	08/22/16 18:32	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 46 SO 005

Date Collected: 08/10/16 10:05

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-4

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 00:15	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	81			23 - 146			08/19/16 08:47	08/23/16 00:15	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:14	08/22/16 19:31	1
Barium	0.54		0.13	0.038	mg/L		08/19/16 12:14	08/22/16 19:31	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:14	08/22/16 19:31	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:31	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:31	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:14	08/22/16 19:31	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 19:31	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00015	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:12	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	-0.000674	U	0.183	0.183	1.00	0.336	pCi/g	08/19/16 14:09	08/25/16 04:41	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.209	U	0.182	0.183	3.00	0.293	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	66.1			40 - 110				08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	-0.0360	U	0.289	0.289	1.00	0.499	pCi/g	08/18/16 08:43	08/22/16 19:03	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	79.3			30 - 110				08/18/16 08:43	08/22/16 19:03	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 50 SO 005

Date Collected: 08/10/16 10:45

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-5

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 00:37	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	82			23 - 146			08/19/16 08:47	08/23/16 00:37	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:16	08/22/16 19:36	1
Barium	0.35		0.13	0.038	mg/L		08/19/16 12:16	08/22/16 19:36	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:16	08/22/16 19:36	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:16	08/22/16 19:36	1
Lead	0.020	J	0.025	0.0075	mg/L		08/19/16 12:16	08/22/16 19:36	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:16	08/22/16 19:36	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:16	08/22/16 19:36	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00015	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:14	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.937		0.285	0.297	1.00	0.347	pCi/g	08/19/16 14:09	08/25/16 05:26	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	-0.0578	U	0.141	0.141	3.00	0.257	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	88.1			40 - 110				08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	0.0178	U	0.250	0.250	1.00	0.428	pCi/g	08/18/16 08:43	08/22/16 19:34	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	92.8			30 - 110				08/18/16 08:43	08/22/16 19:34	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 47 SO 005

Date Collected: 08/10/16 10:53

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-6

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1260	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
Polychlorinated biphenyls, Total	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 01:00	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	72			23 - 146			08/19/16 08:47	08/23/16 01:00	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.10	U	0.25	0.10	mg/L		08/19/16 12:16	08/23/16 20:38	10
Barium	0.38	J	1.3	0.38	mg/L		08/19/16 12:16	08/23/16 20:38	10
Cadmium	0.038	U	0.13	0.038	mg/L		08/19/16 12:16	08/23/16 20:38	10
Chromium	0.075	U	0.25	0.075	mg/L		08/19/16 12:16	08/23/16 20:38	10
Lead	0.075	U	0.25	0.075	mg/L		08/19/16 12:16	08/23/16 20:38	10
Selenium	0.13	U	0.38	0.13	mg/L		08/19/16 12:16	08/23/16 20:38	10
Silver	0.075	U	0.25	0.075	mg/L		08/19/16 12:16	08/23/16 20:38	10

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J B	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 21:16	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.100	U	0.201	0.201	1.00	0.346	pCi/g	08/19/16 14:09	08/25/16 05:49	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.113	U	0.127	0.128	3.00	0.209	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	89.6			40 - 110				08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	-0.0177	U	0.327	0.327	1.00	0.563	pCi/g	08/18/16 09:45	08/23/16 16:14	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	76.4			30 - 110				08/18/16 09:45	08/23/16 16:14	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 48 SO 005

Date Collected: 08/10/16 11:12

Date Received: 08/11/16 09:20

Lab Sample ID: 160-18591-7

Matrix: Solid

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:08	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	83			23 - 146			08/19/16 08:47	08/23/16 02:08	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:38	5
Barium	0.92		0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:38	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:38	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:38	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:38	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:38	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:38	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00014	J B	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 20:05	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.121	U	0.201	0.201	1.00	0.341	pCi/g	08/19/16 14:09	08/25/16 06:11	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.142	U	0.141	0.141	3.00	0.228	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	77.2			40 - 110				08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	-0.101	U	0.300	0.300	1.00	0.523	pCi/g	08/18/16 09:45	08/23/16 17:22	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	81.3			30 - 110				08/18/16 09:45	08/23/16 17:22	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 63 SO 010

Lab Sample ID: 160-18591-8

Matrix: Solid

Date Collected: 08/10/16 13:45

Date Received: 08/11/16 09:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1254	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1260	0.015	J	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1262	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
Polychlorinated biphenyls, Total	0.015	J	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
PCB-1268	0.0079	U	0.033	0.0079	mg/Kg		08/19/16 08:47	08/23/16 02:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	79		23 - 146				08/19/16 08:47	08/23/16 02:30	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.096	J	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:43	5
Barium	1.0		0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:43	5
Cadmium	0.10		0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:43	5
Chromium	0.34		0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:43	5
Lead	1.4		0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:43	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:43	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:43	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00010	J B	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 20:11	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.180	U	0.210	0.210	1.00	0.345	pCi/g	08/19/16 14:09	08/25/16 06:34	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	-0.0263	U	0.142	0.142	3.00	0.256	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Sr Carrier	80.3		40 - 110					08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	0.0391	U	0.284	0.284	1.00	0.485	pCi/g	08/18/16 09:45	08/23/16 17:56	1
Tracer	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Tc-99m	88.6		30 - 110					08/18/16 09:45	08/23/16 17:56	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Client Sample ID: YMTFA 64 SO 010

Lab Sample ID: 160-18591-9

Matrix: Solid

Date Collected: 08/10/16 14:55

Date Received: 08/11/16 09:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1254	0.014	J	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1260	0.017	J	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
Polychlorinated biphenyls, Total	0.031	J	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/19/16 08:47	08/23/16 02:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surrogate)	87		23 - 146				08/19/16 08:47	08/23/16 02:53	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.050	U	0.13	0.050	mg/L		08/23/16 15:14	08/24/16 18:47	5
Barium	0.52	J	0.63	0.19	mg/L		08/23/16 15:14	08/24/16 18:47	5
Cadmium	0.019	U	0.063	0.019	mg/L		08/23/16 15:14	08/24/16 18:47	5
Chromium	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:47	5
Lead	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:47	5
Selenium	0.063	U	0.19	0.063	mg/L		08/23/16 15:14	08/24/16 18:47	5
Silver	0.038	U	0.13	0.038	mg/L		08/23/16 15:14	08/24/16 18:47	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00011	J B	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 20:13	1

Method: H3-04-RC - Tritium (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Tritium	0.00558	U	0.188	0.188	1.00	0.343	pCi/g	08/19/16 14:09	08/25/16 06:57	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.0358	U	0.141	0.141	3.00	0.248	pCi/g	08/17/16 18:19	08/19/16 19:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Sr Carrier	70.9		40 - 110					08/17/16 18:19	08/19/16 19:00	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	0.101	U	0.228	0.228	1.00	0.383	pCi/g	08/22/16 08:14	08/25/16 10:52	1
Tracer	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Tc-99m	98.3		30 - 110					08/22/16 08:14	08/25/16 10:52	1

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 160-265573/1-A

Matrix: Solid

Analysis Batch: 265947

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265573

Analyte	MB		RL	MDL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed		
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg	08/19/16 08:47	08/22/16 18:15		1	

MB MB

Surrogate	%Recovery		Qualifier	Limits	Prepared	Analyzed	Dil Fac
	109						
DCB Decachlorobiphenyl (Surrogate)				23 - 146	08/19/16 08:47	08/22/16 18:15	1

Lab Sample ID: LCS 160-265573/2-A

Matrix: Solid

Analysis Batch: 265947

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265573

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
PCB-1016	0.167	0.136		mg/Kg	82	52 - 134	
PCB-1260	0.167	0.146		mg/Kg	88	50 - 132	

Surrogate	LCS		Limits	%Rec.
	%Recovery	Qualifier		
DCB Decachlorobiphenyl (Surrogate)	107		23 - 146	

Lab Sample ID: 160-18570-D-1-B MS

Matrix: Solid

Analysis Batch: 265947

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 265573

Analyte	Sample Result	Sample Qualifier	MS		Unit	D	%Rec	%Rec.
			MS Result	MS Qualifier				
PCB-1016	0.0095	U	0.165	0.131	mg/Kg	80	23 - 140	
PCB-1260	0.0079	U	0.165	0.125	mg/Kg	75	20 - 131	

Surrogate	MS		Limits	%Rec.
	MS %Recovery	MS Qualifier		
DCB Decachlorobiphenyl (Surrogate)	87		23 - 146	

Lab Sample ID: 160-18570-D-1-C MSD

Matrix: Solid

Analysis Batch: 265947

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 265573

Analyte	Sample Result	Sample Qualifier	MSD		Unit	D	%Rec	%Rec.
			MSD Result	MSD Qualifier				
PCB-1016	0.0095	U	0.165	0.143	mg/Kg	87	23 - 140	9
PCB-1260	0.0079	U	0.165	0.142	mg/Kg	86	20 - 131	13

Surrogate	MSD		Limits	RPD
	MSD %Recovery	MSD Qualifier		
DCB Decachlorobiphenyl (Surrogate)	95		23 - 146	30

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 160-265665/2-A

Matrix: Solid

Analysis Batch: 266039

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265665

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	2.50	2.70		mg/L		108	80 - 120
Barium	2.50	2.46		mg/L		98	80 - 120
Cadmium	2.50	2.60		mg/L		104	80 - 120
Chromium	2.50	2.58		mg/L		103	80 - 120
Lead	2.50	2.58		mg/L		103	80 - 120
Selenium	1.25	1.39		mg/L		112	80 - 120
Silver	0.500	0.529		mg/L		106	80 - 120

Lab Sample ID: LCS 160-266138/2-A

Matrix: Solid

Analysis Batch: 266472

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	2.50	2.62		mg/L		105	80 - 120
Barium	2.50	2.48		mg/L		99	80 - 120
Cadmium	2.50	2.60		mg/L		104	80 - 120
Chromium	2.50	2.58		mg/L		103	80 - 120
Lead	2.50	2.48		mg/L		99	80 - 120
Selenium	1.25	1.37		mg/L		109	80 - 120
Silver	0.500	0.554		mg/L		111	80 - 120

Lab Sample ID: LB 160-265133/1-B

Matrix: Solid

Analysis Batch: 266039

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 265665

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	U	0.025	0.010	mg/L		08/19/16 12:14	08/22/16 17:22	1
Barium	0.038	U	0.13	0.038	mg/L		08/19/16 12:14	08/22/16 17:22	1
Cadmium	0.0038	U	0.013	0.0038	mg/L		08/19/16 12:14	08/22/16 17:22	1
Chromium	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 17:22	1
Lead	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 17:22	1
Selenium	0.013	U	0.038	0.013	mg/L		08/19/16 12:14	08/22/16 17:22	1
Silver	0.0075	U	0.025	0.0075	mg/L		08/19/16 12:14	08/22/16 17:22	1

Lab Sample ID: 160-18093-G-1-E MS

Matrix: Solid

Analysis Batch: 266039

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 265665

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.010	U	2.50	2.64		mg/L		106	75 - 125
Barium	0.23		2.50	2.69		mg/L		98	75 - 125
Cadmium	0.031		2.50	2.59		mg/L		103	75 - 125
Chromium	0.0075	U	2.50	2.53		mg/L		101	75 - 125
Lead	0.23	W	2.50	2.71		mg/L		99	75 - 125
Selenium	0.013	U	1.25	1.34		mg/L		107	75 - 125
Silver	0.0075	U	0.500	0.531		mg/L		106	75 - 125

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-18093-G-1-F MSD

Matrix: Solid

Analysis Batch: 266039

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	0.010	U	2.50	2.67		mg/L	107	75 - 125	1	20	
Barium	0.23		2.50	2.68		mg/L	98	75 - 125	1	20	
Cadmium	0.031		2.50	2.61		mg/L	103	75 - 125	1	20	
Chromium	0.0075	U	2.50	2.55		mg/L	102	75 - 125	1	20	
Lead	0.23	W	2.50	2.74		mg/L	100	75 - 125	1	20	
Selenium	0.013	U	1.25	1.36		mg/L	108	75 - 125	1	20	
Silver	0.0075	U	0.500	0.522		mg/L	104	75 - 125	2	20	

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 265665

Lab Sample ID: LB 160-265387/1-D

Matrix: Solid

Analysis Batch: 266472

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.010	U	0.025	0.010	mg/L	08/23/16 15:14	08/24/16 17:06		1
Barium	0.038	U	0.13	0.038	mg/L	08/23/16 15:14	08/24/16 17:06		1
Cadmium	0.0038	U	0.013	0.0038	mg/L	08/23/16 15:14	08/24/16 17:06		1
Chromium	0.0075	U	0.025	0.0075	mg/L	08/23/16 15:14	08/24/16 17:06		1
Lead	0.0075	U	0.025	0.0075	mg/L	08/23/16 15:14	08/24/16 17:06		1
Selenium	0.013	U	0.038	0.013	mg/L	08/23/16 15:14	08/24/16 17:06		1
Silver	0.0075	U	0.025	0.0075	mg/L	08/23/16 15:14	08/24/16 17:06		1

Lab Sample ID: 160-18348-E-1-T MS ^5

Matrix: Solid

Analysis Batch: 266472

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	0.050	U	2.50	2.45		mg/L	98	75 - 125			
Barium	0.31	J	2.50	2.78		mg/L	99	75 - 125			
Cadmium	0.031	J	2.50	2.55		mg/L	101	75 - 125			
Chromium	0.038	U	2.50	2.56		mg/L	102	75 - 125			
Lead	0.75		2.50	3.32		mg/L	103	75 - 125			
Selenium	0.063	U	1.25	1.25		mg/L	100	75 - 125			
Silver	0.038	U	0.500	0.530		mg/L	106	75 - 125			

Lab Sample ID: 160-18348-E-1-U MSD ^5

Matrix: Solid

Analysis Batch: 266472

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	0.050	U	2.50	2.46		mg/L	99	75 - 125	1	20	
Barium	0.31	J	2.50	2.80		mg/L	99	75 - 125	1	20	
Cadmium	0.031	J	2.50	2.55		mg/L	101	75 - 125	0	20	
Chromium	0.038	U	2.50	2.57		mg/L	103	75 - 125	0	20	
Lead	0.75		2.50	3.28		mg/L	101	75 - 125	1	20	
Selenium	0.063	U	1.25	1.24		mg/L	99	75 - 125	1	20	
Silver	0.038	U	0.500	0.535		mg/L	107	75 - 125	1	20	

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LB 160-266071/1-A

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266071

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000137	J	0.0010	0.000079	mg/L		08/23/16 10:50	08/23/16 19:28	1

Lab Sample ID: LCS 160-266071/2-A

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266071

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Mercury	0.0250	0.0256		mg/L		102	80 - 120

Lab Sample ID: LB 160-266078/1-A

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266078

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000149	J	0.0010	0.000079	mg/L		08/23/16 10:59	08/23/16 20:21	1

Lab Sample ID: LCS 160-266078/2-A

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Mercury	0.0250	0.0255		mg/L		102	80 - 120

Lab Sample ID: 160-18348-E-1-Q MS

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 266071

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Mercury	0.000079	U	0.0250	0.0253		mg/L		101	70 - 130

Lab Sample ID: 160-18348-E-1-R MSD

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 266071

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Mercury	0.000079	U	0.0250	0.0254		mg/L		102	70 - 130	0 20

Lab Sample ID: 160-18093-G-1-K MS

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 266078

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Mercury	0.000079	U	0.0250	0.0260		mg/L		104	70 - 130

Lab Sample ID: 160-18093-G-1-L MSD

Matrix: Solid

Analysis Batch: 266428

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 266078

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Mercury	0.000079	U	0.0250	0.0260		mg/L		104	70 - 130	0 20

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: H3-04-RC - Tritium (LSC)

Lab Sample ID: MB 160-265690/1-A

Matrix: Solid

Analysis Batch: 266040

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265690

Analyte	Result	MB Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Tritium	0.06905	U	0.175	0.175	1.00	0.305	pCi/g	08/19/16 13:28	08/22/16 10:28	1

Lab Sample ID: LCS 160-265690/2-A

Matrix: Solid

Analysis Batch: 266040

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265690

Analyte	Added	Spike	LCS	LCS	Total	RL	MDC	Unit	%Rec.	Limits
		Result	Qual	Uncert. (2σ+/-)	Uncert.					
Tritium	10.1	10.66		1.17	1.17	1.00	0.303	pCi/g	105	80 - 114

Lab Sample ID: 160-18570-C-2-D MS

Matrix: Solid

Analysis Batch: 266040

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 265690

Analyte	Sample	Sample	Spike	MS	MS	Total	RL	MDC	Unit	%Rec.
	Result	Qual	Added	Result	Qual	Uncert. (2σ+/-)				
Tritium	0.177	U	10.1	10.72		1.21	1.00	0.345	pCi/g	106

Lab Sample ID: 160-18570-E-1-B DU

Matrix: Solid

Analysis Batch: 266040

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 265690

Analyte	Sample	Sample	Spike	DU	DU	Total	RL	MDC	Unit	RER
	Result	Qual	Added	Result	Qual	Uncert. (2σ+/-)				
Tritium	0.154	U	10.1	0.2335	U	0.224	1.00	0.357	pCi/g	0.18

Lab Sample ID: MB 160-265698/1-A

Matrix: Solid

Analysis Batch: 266523

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265698

Analyte	Result	MB Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Tritium	0.1469	U	0.178	0.178	1.00	0.292	pCi/g	08/19/16 14:09	08/25/16 03:10	1

Lab Sample ID: LCS 160-265698/2-A

Matrix: Solid

Analysis Batch: 266523

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265698

Analyte	Added	Spike	LCS	LCS	Total	RL	MDC	Unit	%Rec.
		Result	Qual	Uncert. (2σ+/-)	Uncert.				
Tritium	10.1	8.977		1.01	1.01	1.00	0.299	pCi/g	89

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: H3-04-RC - Tritium (LSC) (Continued)

Lab Sample ID: 160-18591-4 MS

Matrix: Solid

Analysis Batch: 266523

Client Sample ID: YMTFA 46 SO 005

Prep Type: Total/NA

Prep Batch: 265698

Analyte	Sample	Sample	Spike	MS	MS	Total	Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.Limits
	Result	Qual	Added	Result	Qual							
Tritium	-0.00067 4	U	10.1	9.132		1.05	1.00		0.332	pCi/g	90	78 - 122

Lab Sample ID: 160-18591-3 DU

Matrix: Solid

Analysis Batch: 266523

Client Sample ID: YMTFA 45 SO 005

Prep Type: Total/NA

Prep Batch: 265698

Analyte	Sample	Sample	DU	DU	Total	Uncert. (2σ+/-)	RL	MDC	Unit		RERLimit	
	Result	Qual	Result	Qual								
Tritium	0.0519	U	0.1120	U	0.202	0.202	1.00	0.346	pCi/g		0.15	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Lab Sample ID: MB 160-265380/1-A

Matrix: Solid

Analysis Batch: 265565

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265380

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Strontium 89/90	-0.05990	U	0.140	0.140	3.00	0.255	pCi/g	08/17/16 18:19	08/19/16 14:03	1
Carrier										
Sr Carrier	MB	MB	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac
			90.3		40 - 110			08/17/16 18:19	08/19/16 14:03	1

Lab Sample ID: LCS 160-265380/2-A

Matrix: Solid

Analysis Batch: 265565

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265380

Analyte	Spike		Count	Total	RL	MDC	Unit	%Rec	%Rec.Limits	Dil Fac
	Added		Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Strontium 89/90	8.61		7.896	0.711	3.00	0.221	pCi/g	92	75 - 125	1
Carrier										
Sr Carrier	LCS	LCS	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac
			90.4		40 - 110			08/17/16 18:19	08/19/16 14:03	1

Lab Sample ID: 160-18570-F-1-D DU

Matrix: Solid

Analysis Batch: 265565

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 265380

Analyte	Sample	Sample	DU	DU	Total	Uncert. (2σ+/-)	RL	MDC	Unit		RERLimit	
	Result	Qual	Result	Qual								
Strontium 89/90	0.258		0.2640	U	0.179	0.179	3.00	0.279	pCi/g		0.02	1
Carrier												
Sr Carrier	DU	DU	%Yield	Qualifier	Limits			84.3		40 - 110		

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: TC-02-RC - Technetium-99 (LSC)

Lab Sample ID: MB 160-265399/1-A

Matrix: Solid

Analysis Batch: 266052

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265399

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Technetium-99	0.02872	U	0.211	0.211	1.00	0.360	pCi/g	08/18/16 08:43	08/22/16 11:19	1
Tracer										
Tc-99m	109			30 - 110				Prepared	Analyzed	Dil Fac
								08/18/16 08:43	08/22/16 11:19	1

Lab Sample ID: LCS 160-265399/2-A

Matrix: Solid

Analysis Batch: 266052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265399

Analyte	Spike		LCS Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec.	Limits
	Sample	Sample									
Technetium-99			34.4	34.02		3.39	1.00	0.419	pCi/g	99	75 - 125
Tracer											
Tc-99m	LCS	LCS	%Yield	Qualifier	Limits						
	93.4				30 - 110						

Lab Sample ID: 160-18570-C-1-H DU

Matrix: Solid

Analysis Batch: 266052

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 265399

Analyte	Sample		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
	Sample	Sample								
Technetium-99	-0.104	U	0.08431	U	0.258	1.00	0.435	pCi/g	0.39	1
Tracer										
Tc-99m	DU	DU	%Yield	Qualifier	Limits					
	89.9				30 - 110					

Lab Sample ID: MB 160-265402/1-A

Matrix: Solid

Analysis Batch: 266358

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265402

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Technetium-99	-0.1132	U	0.261	0.261	1.00	0.457	pCi/g	08/18/16 09:45	08/23/16 15:05	1
Tracer										
Tc-99m	MB	MB	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac
	93.5				30 - 110			08/18/16 09:45	08/23/16 15:05	1

Lab Sample ID: LCS 160-265402/2-A

Matrix: Solid

Analysis Batch: 266358

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265402

Analyte	Spike		LCS Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec.	Limits
	Sample	Sample									
Technetium-99			34.2	31.89		3.18	1.00	0.421	pCi/g	93	75 - 125
Tracer											
Tc-99m	LCS	LCS	%Yield	Qualifier	Limits						
	93.5				30 - 110						

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: TC-02-RC - Technetium-99 (LSC) (Continued)

Lab Sample ID: LCS 160-265402/2-A

Matrix: Solid

Analysis Batch: 266358

Tracer	LCS		Limits
	%Yield	Qualifier	
Tc-99m	102		30 - 110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265402

Lab Sample ID: 160-18591-6 DU

Matrix: Solid

Analysis Batch: 266358

Analyte	Sample	Sample	DU		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
	Result	Qual	Result	Qual	Result	Qual						
Technetium-99	-0.0177	U	-0.1108	U	0.302		1.00	0.527	pCi/g		0.15	1
<i>DU DU</i>												
<i>Tracer %Yield Qualifier Limits</i>												
Tc-99m	81.6		30 - 110									

Client Sample ID: YMTFA 47 SO 005

Prep Type: Total/NA

Prep Batch: 265402

Lab Sample ID: MB 160-265850/1-A

Matrix: Solid

Analysis Batch: 266515

Analyte	MB		Count	Total		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Technetium-99	0.07635	U	0.219	0.219	0.219	1.00	0.370	pCi/g	08/22/16 08:14	08/25/16 09:50	1
<i>MB MB</i>											
<i>Tracer %Yield Qualifier Limits</i>											
Tc-99m	102		30 - 110						08/22/16 08:14	08/25/16 09:50	1

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265850

Lab Sample ID: LCS 160-265850/2-A

Matrix: Solid

Analysis Batch: 266515

Analyte	Spike		Count	Total		RL	MDC	Unit	%Rec	Limits
	Added	Result	Uncert. (2σ+/-)	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Technetium-99	34.4	35.94	3.58	3.58	3.58	1.00	0.412	pCi/g	105	75 - 125
<i>LCS LCS</i>										
<i>Tracer %Yield Qualifier Limits</i>										
Tc-99m	91.3		30 - 110							

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265850

Lab Sample ID: 160-18591-9 DU

Matrix: Solid

Analysis Batch: 266515

Analyte	Sample	Sample	DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
	Result	Qual	Result	Qual						
Technetium-99	0.101	U	-0.06548	U	0.236	1.00	0.411	pCi/g	0.36	1
<i>DU DU</i>										
<i>Tracer %Yield Qualifier Limits</i>										
Tc-99m	91.7		30 - 110							

Client Sample ID: YMTFA 64 SO 010

Prep Type: Total/NA

Prep Batch: 265850

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

GC Semi VOA

Prep Batch: 265573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	3550C	5
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	3550C	5
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	3550C	5
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	3550C	5
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	3550C	5
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	3550C	5
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	3550C	5
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	3550C	5
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	3550C	5
MB 160-265573/1-A	Method Blank	Total/NA	Solid	3550C	5
LCS 160-265573/2-A	Lab Control Sample	Total/NA	Solid	3550C	5
160-18570-D-1-B MS	Matrix Spike	Total/NA	Solid	3550C	5
160-18570-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	5

Analysis Batch: 265947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	8082A	265573
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	8082A	265573
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	8082A	265573
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	8082A	265573
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	8082A	265573
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	8082A	265573
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	8082A	265573
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	8082A	265573
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	8082A	265573
MB 160-265573/1-A	Method Blank	Total/NA	Solid	8082A	265573
LCS 160-265573/2-A	Lab Control Sample	Total/NA	Solid	8082A	265573
160-18570-D-1-B MS	Matrix Spike	Total/NA	Solid	8082A	265573
160-18570-D-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8082A	265573

Metals

Leach Batch: 265133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	TCLP	Solid	1311	
160-18591-2	YMTFA 33 SO 002	TCLP	Solid	1311	
160-18591-3	YMTFA 45 SO 005	TCLP	Solid	1311	
160-18591-4	YMTFA 46 SO 005	TCLP	Solid	1311	
160-18591-5	YMTFA 50 SO 005	TCLP	Solid	1311	
160-18591-6	YMTFA 47 SO 005	TCLP	Solid	1311	
LB 160-265133/1-B	Method Blank	TCLP	Solid	1311	
160-18093-G-1-E MS	Matrix Spike	TCLP	Solid	1311	
160-18093-G-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
160-18093-G-1-K MS	Matrix Spike	TCLP	Solid	1311	
160-18093-G-1-L MSD	Matrix Spike Duplicate	TCLP	Solid	1311	

Leach Batch: 265387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-7	YMTFA 48 SO 005	TCLP	Solid	1311	
160-18591-8	YMTFA 63 SO 010	TCLP	Solid	1311	

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Metals (Continued)

Leach Batch: 265387 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-9	YMTFA 64 SO 010	TCLP	Solid	1311	
LB 160-265387/1-D	Method Blank	TCLP	Solid	1311	
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	1311	
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	1311	
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	1311	

Prep Batch: 265665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	TCLP	Solid	3010A	265133
160-18591-2	YMTFA 33 SO 002	TCLP	Solid	3010A	265133
160-18591-3	YMTFA 45 SO 005	TCLP	Solid	3010A	265133
160-18591-4	YMTFA 46 SO 005	TCLP	Solid	3010A	265133
160-18591-5	YMTFA 50 SO 005	TCLP	Solid	3010A	265133
160-18591-6	YMTFA 47 SO 005	TCLP	Solid	3010A	265133
LB 160-265133/1-B	Method Blank	TCLP	Solid	3010A	265133
LCS 160-265665/2-A	Lab Control Sample	Total/NA	Solid	3010A	
160-18093-G-1-E MS	Matrix Spike	TCLP	Solid	3010A	265133
160-18093-G-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	3010A	265133

Analysis Batch: 266039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	TCLP	Solid	6010C	265665
160-18591-2	YMTFA 33 SO 002	TCLP	Solid	6010C	265665
160-18591-3	YMTFA 45 SO 005	TCLP	Solid	6010C	265665
160-18591-4	YMTFA 46 SO 005	TCLP	Solid	6010C	265665
160-18591-5	YMTFA 50 SO 005	TCLP	Solid	6010C	265665
LB 160-265133/1-B	Method Blank	TCLP	Solid	6010C	265665
LCS 160-265665/2-A	Lab Control Sample	Total/NA	Solid	6010C	265665
160-18093-G-1-E MS	Matrix Spike	TCLP	Solid	6010C	265665
160-18093-G-1-F MSD	Matrix Spike Duplicate	TCLP	Solid	6010C	265665

Prep Batch: 266071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-7	YMTFA 48 SO 005	TCLP	Solid	7470A	265387
160-18591-8	YMTFA 63 SO 010	TCLP	Solid	7470A	265387
160-18591-9	YMTFA 64 SO 010	TCLP	Solid	7470A	265387
LB 160-266071/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 160-266071/2-A	Lab Control Sample	Total/NA	Solid	7470A	
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	7470A	265387
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	265387

Prep Batch: 266078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	TCLP	Solid	7470A	265133
160-18591-2	YMTFA 33 SO 002	TCLP	Solid	7470A	265133
160-18591-3	YMTFA 45 SO 005	TCLP	Solid	7470A	265133
160-18591-4	YMTFA 46 SO 005	TCLP	Solid	7470A	265133
160-18591-5	YMTFA 50 SO 005	TCLP	Solid	7470A	265133
160-18591-6	YMTFA 47 SO 005	TCLP	Solid	7470A	265133
LB 160-266078/1-A	Method Blank	Total/NA	Solid	7470A	

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Metals (Continued)

Prep Batch: 266078 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-266078/2-A	Lab Control Sample	Total/NA	Solid	7470A	
160-18093-G-1-K MS	Matrix Spike	TCLP	Solid	7470A	265133
160-18093-G-1-L MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	265133

Prep Batch: 266138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-7	YMTFA 48 SO 005	TCLP	Solid	3010A	265387
160-18591-8	YMTFA 63 SO 010	TCLP	Solid	3010A	265387
160-18591-9	YMTFA 64 SO 010	TCLP	Solid	3010A	265387
LB 160-265387/1-D	Method Blank	TCLP	Solid	3010A	265387
LCS 160-266138/2-A	Lab Control Sample	Total/NA	Solid	3010A	
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	3010A	265387
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	3010A	265387

Analysis Batch: 266197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-6	YMTFA 47 SO 005	TCLP	Solid	6010C	265665

Analysis Batch: 266428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	TCLP	Solid	7470A	266078
160-18591-2	YMTFA 33 SO 002	TCLP	Solid	7470A	266078
160-18591-3	YMTFA 45 SO 005	TCLP	Solid	7470A	266078
160-18591-4	YMTFA 46 SO 005	TCLP	Solid	7470A	266078
160-18591-5	YMTFA 50 SO 005	TCLP	Solid	7470A	266078
160-18591-6	YMTFA 47 SO 005	TCLP	Solid	7470A	266078
160-18591-7	YMTFA 48 SO 005	TCLP	Solid	7470A	266071
160-18591-8	YMTFA 63 SO 010	TCLP	Solid	7470A	266071
160-18591-9	YMTFA 64 SO 010	TCLP	Solid	7470A	266071
LB 160-266071/1-A	Method Blank	Total/NA	Solid	7470A	266071
LB 160-266078/1-A	Method Blank	Total/NA	Solid	7470A	266078
LCS 160-266071/2-A	Lab Control Sample	Total/NA	Solid	7470A	266071
LCS 160-266078/2-A	Lab Control Sample	Total/NA	Solid	7470A	266078
160-18093-G-1-K MS	Matrix Spike	TCLP	Solid	7470A	266078
160-18093-G-1-L MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	266078
160-18348-E-1-Q MS	Matrix Spike	TCLP	Solid	7470A	266071
160-18348-E-1-R MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	266071

Analysis Batch: 266472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-7	YMTFA 48 SO 005	TCLP	Solid	6010C	266138
160-18591-8	YMTFA 63 SO 010	TCLP	Solid	6010C	266138
160-18591-9	YMTFA 64 SO 010	TCLP	Solid	6010C	266138
LB 160-265387/1-D	Method Blank	TCLP	Solid	6010C	266138
LCS 160-266138/2-A	Lab Control Sample	Total/NA	Solid	6010C	266138
160-18348-E-1-T MS ^5	Matrix Spike	TCLP	Solid	6010C	266138
160-18348-E-1-U MSD ^5	Matrix Spike Duplicate	TCLP	Solid	6010C	266138

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

General Chemistry

Analysis Batch: 265418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	Moisture	
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	Moisture	
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	Moisture	
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	Moisture	
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	Moisture	
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	Moisture	
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	Moisture	
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	Moisture	
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	Moisture	
160-18570-F-1-D DU	Duplicate	Total/NA	Solid	Moisture	

Rad

Leach Batch: 264331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18570-F-1-D DU	Duplicate	Total/NA	Solid	Dry and Grind	

Leach Batch: 264511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	Dry and Grind	
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	Dry and Grind	
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	Dry and Grind	
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	Dry and Grind	

Prep Batch: 265380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	DPS-0	264511
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	DPS-0	264511
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	DPS-0	264511
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	DPS-0	264511
MB 160-265380/1-A	Method Blank	Total/NA	Solid	DPS-0	
LCS 160-265380/2-A	Lab Control Sample	Total/NA	Solid	DPS-0	
160-18570-F-1-D DU	Duplicate	Total/NA	Solid	DPS-0	264331

Prep Batch: 265399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	Ext_Chrom_LSC	
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	Ext_Chrom_LSC	
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	Ext_Chrom_LSC	
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	Ext_Chrom_LSC	

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Rad (Continued)

Prep Batch: 265399 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	Ext_Chrom_LSC	1
MB 160-265399/1-A	Method Blank	Total/NA	Solid	Ext_Chrom_LSC	2
LCS 160-265399/2-A	Lab Control Sample	Total/NA	Solid	Ext_Chrom_LSC	3
160-18570-C-1-H DU	Duplicate	Total/NA	Solid	Ext_Chrom_LSC	4

Prep Batch: 265402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	Ext_Chrom_LSC	5
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	Ext_Chrom_LSC	6
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	Ext_Chrom_LSC	7
MB 160-265402/1-A	Method Blank	Total/NA	Solid	Ext_Chrom_LSC	8
LCS 160-265402/2-A	Lab Control Sample	Total/NA	Solid	Ext_Chrom_LSC	9
160-18591-6 DU	YMTFA 47 SO 005	Total/NA	Solid	Ext_Chrom_LSC	10

Prep Batch: 265690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-1	YMTFA 44 SO 005	Total/NA	Solid	LSC_Dist_Susp	11
160-18591-2	YMTFA 33 SO 002	Total/NA	Solid	LSC_Dist_Susp	12
MB 160-265690/1-A	Method Blank	Total/NA	Solid	LSC_Dist_Susp	13
LCS 160-265690/2-A	Lab Control Sample	Total/NA	Solid	LSC_Dist_Susp	14
160-18570-C-2-D MS	Matrix Spike	Total/NA	Solid	LSC_Dist_Susp	
160-18570-E-1-B DU	Duplicate	Total/NA	Solid	LSC_Dist_Susp	

Prep Batch: 265698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-3	YMTFA 45 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-4	YMTFA 46 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-5	YMTFA 50 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-6	YMTFA 47 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-7	YMTFA 48 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-8	YMTFA 63 SO 010	Total/NA	Solid	LSC_Dist_Susp	
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	LSC_Dist_Susp	
MB 160-265698/1-A	Method Blank	Total/NA	Solid	LSC_Dist_Susp	
LCS 160-265698/2-A	Lab Control Sample	Total/NA	Solid	LSC_Dist_Susp	
160-18591-4 MS	YMTFA 46 SO 005	Total/NA	Solid	LSC_Dist_Susp	
160-18591-3 DU	YMTFA 45 SO 005	Total/NA	Solid	LSC_Dist_Susp	

Prep Batch: 265850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18591-9	YMTFA 64 SO 010	Total/NA	Solid	Ext_Chrom_LSC	
MB 160-265850/1-A	Method Blank	Total/NA	Solid	Ext_Chrom_LSC	
LCS 160-265850/2-A	Lab Control Sample	Total/NA	Solid	Ext_Chrom_LSC	
160-18591-9 DU	YMTFA 64 SO 010	Total/NA	Solid	Ext_Chrom_LSC	

TestAmerica St. Louis

Surrogate Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (23-146)
160-18570-D-1-B MS	Matrix Spike	87
160-18570-D-1-C MSD	Matrix Spike Duplicate	95
160-18591-2	YMTFA 33 SO 002	82
160-18591-4	YMTFA 46 SO 005	81
160-18591-5	YMTFA 50 SO 005	82
160-18591-6	YMTFA 47 SO 005	72
160-18591-7	YMTFA 48 SO 005	83
160-18591-8	YMTFA 63 SO 010	79
160-18591-9	YMTFA 64 SO 010	87
MB 160-265573/1-A	Method Blank	109

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (23-146)
160-18591-1	YMTFA 44 SO 005	82
160-18591-3	YMTFA 45 SO 005	87
LCS 160-265573/2-A	Lab Control Sample	107

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TestAmerica St. Louis

Tracer/Carrier Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18591-1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Percent Yield (Acceptance Limits)					
			Yield	Yield %				
160-18570-F-1-D DU	Duplicate	84.3						
160-18591-1	YMTFA 44 SO 005	85.2						
160-18591-2	YMTFA 33 SO 002	84.7						
160-18591-3	YMTFA 45 SO 005	84.1						
160-18591-4	YMTFA 46 SO 005	66.1						
160-18591-5	YMTFA 50 SO 005	88.1						
160-18591-6	YMTFA 47 SO 005	89.6						
160-18591-7	YMTFA 48 SO 005	77.2						
160-18591-8	YMTFA 63 SO 010	80.3						
160-18591-9	YMTFA 64 SO 010	70.9						
LCS 160-265380/2-A	Lab Control Sample	90.4						
MB 160-265380/1-A	Method Blank	90.3						

Tracer/Carrier Legend

Sr (C) = Sr Carrier

Method: TC-02-RC - Technetium-99 (LSC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Tc-99m (30-110)	
160-18570-C-1-H DU	Duplicate	89.9	
160-18591-1	YMTFA 44 SO 005	96.6	
160-18591-2	YMTFA 33 SO 002	91.3	
160-18591-3	YMTFA 45 SO 005	74.4	
160-18591-4	YMTFA 46 SO 005	79.3	
160-18591-5	YMTFA 50 SO 005	92.8	
160-18591-6	YMTFA 47 SO 005	76.4	
160-18591-6 DU	YMTFA 47 SO 005	81.6	
160-18591-7	YMTFA 48 SO 005	81.3	
160-18591-8	YMTFA 63 SO 010	88.6	
160-18591-9	YMTFA 64 SO 010	98.3	
160-18591-9 DU	YMTFA 64 SO 010	91.7	
LCS 160-265399/2-A	Lab Control Sample	93.4	
LCS 160-265402/2-A	Lab Control Sample	102	
LCS 160-265850/2-A	Lab Control Sample	91.3	
MB 160-265399/1-A	Method Blank	109	
MB 160-265402/1-A	Method Blank	93.5	
MB 160-265850/1-A	Method Blank	102	

Tracer/Carrier Legend

Tc-99m = Tc-99m